What is claimed is:

1. A surface reactor (1) for improving liquid or gaseous fuel, the surface reactor being at least partially made of an alloy containing at least 80% tin, and the alloy constituting an active material that reacts with the fuel,
wherein the surface reactor (1) is made of a filamentous body (1.1) formed as a band, chip, spiral or wire; the ratio of the length (1.2) to the average diameter (1.3) being a value between 10 and 10^8, in particular $2*10^5$.

2. The surface reactor (1) as recited in Claim 1,
wherein the body (1.1) is made of a support material at least coated with the alloy, or is exclusively composed of the alloy.

3. The surface reactor (1) as recited in Claim 1 or 2,
wherein the support material or the body (1.1) is formed as a chip with an average thickness of 0.1-0.9 mm, in particular 0.5 mm, and an average width of 1 to 15 mm, in particular, 5 mm.

4. The surface reactor (1) as recited in at least one of the preceding claims,
wherein the support material or the body (1.1) is formed into the shape of a band, spiral or wire having an average diameter of 1-30 mm, in particular 10 mm, using a mechanical cold or hot forming process.

5. The surface reactor (1) as recited in at least one of the preceding claims,
wherein the body (1.1) is braided, woven, twisted or interwoven in order to increase the surface area.

6. The surface reactor (1) as recited in at least one of the preceding claims,
wherein the body (1.1) formed as a band is at least partially rolled, punched and/or stamped in order to increase the surface area.

7. The surface reactor (1) as recited in at least one of the preceding claims, wherein the alloy is applied to the support structure surface in the form of a coating; and the support material is made of noble metal, or of organic and/or inorganic materials, such as plastic or ceramic.

8. The surface reactor (1) as recited in at least one of the preceding claims, wherein the support material is electrically conductive.

9. The surface reactor (1) as recited in at least one of the preceding claims, wherein the alloy is applied to the support material by electrolysis, vapor-deposition, cold spraying, spraying, or dipping.

10. The surface reactor (1) as recited in at least one of the preceding claims, wherein the body (1.1), in its braided, woven, twisted, or interwoven form, is formed according to the shape of a reaction chamber (3), for example, in a cylindrical, spherical and/or cuboidal shape.

11. The surface reactor (1) as recited in at least one of the preceding claims, wherein the body (1.1) is inserted in fuel-carrying components, such as tanks, hoses, and/or filter housings.

12. The surface reactor (1) as recited in at least one of the preceding claims, wherein the reaction chamber (3) features an inlet pipe (2) and an outlet pipe (4); and a filter (5) is provided at least on the outlet side directly before the outlet pipe (4) downstream of the body (1.1).

13. The surface reactor (1) as recited in at least one of the preceding claims, wherein a spacer ring (6) is provided in the reaction chamber (3) directly after the inlet pipe (2) in the direction of flow between the body (1.1) and the reaction chamber (3).

14. The surface reactor (1) as recited in at least one of the preceding claims, wherein the body (1.1) is covered with a wax or protective coating which, for example, prevents reaction with oxygen and/or oxygen compounds.

15. The surface reactor (1) as recited in at least one of the preceding claims, wherein the alloy contains, in addition to tin, at least one of the metals copper, silver, gold, and platinum in a maximum concentration of 10 %.

16. The surface reactor (1) as recited in at least one of the preceding claims, wherein the alloy is composed of 90-98 % tin, 2-5 % copper, 0.05-2 % silver, and 0.01-5 % gold.

17. A method for manufacturing a surface reactor (1) according to Claim 1, wherein the surface of the material on the body (1.1) is activated by a reducing agent, such as sodium hydroxide solution, washed with an alcohol, and then the surface is sealed.

18. A method for manufacturing a surface reactor (1) according to Claim 17, wherein the material is subjected to an aging process using a reducing agent, the aging process reducing the cross-sectional area, and/or the surface area of the material is microscopically increased.

19. A method for manufacturing a surface reactor (1) according to Claim 17, wherein the material is washed with alcohol after the reductive treatment; and the activated slurries are filtered through a fine filter, and, neutralized in alcohol, introduced as a liquid filling into the reactor chamber (3).

20. The use and manufacture of activated slurry according to Claim 19 for producing fuel additive.

21. A surface reactor (1) made of an alloy of the elements tin, copper, silver and gold, having a composition of 90-98% tin, 2-5% copper, 0.05-2% silver, and 0.01-0.2% gold, wherein the material is cast in a mold and machined into a continuous chip in such a manner that the obtained chip material is deformable. This is the case for a band thickness of 0.1-0.5 mm.

22. A surface reactor (1) made of the alloy specified in Claim 21, wherein the material is made of a deformable wire, which is also braided, woven, or twisted in order to increase the surface area.

23. A surface reactor (1) made of the alloy specified in Claim 21, wherein the material is made of a sheet metal. In order to increase the surface area, the sheet metal is rolled, punched or stamped.

24. A surface reactor (1) made of the alloy specified in Claim 21, wherein the alloy is applied as a coating to a support material that has as large a surface as possible and is made of inactive metal, plastic, or ceramic; the coating being done by:

1. electrolytic deposition on metal, electrically conductive plastic, electrically conductive ceramic,
2. vapor-deposition
3. spraying in the cold state with binding agents in the liquid molten state
4. dipping

25. A surface reactor (1) made of the alloy specified in Claim 21, wherein the material is formed or deformed into a cylindrical, spherical, hemispherical, or tubular shape according to its housing or material, and is inserted into the fuel-carrying components, such as tanks, hoses, and filters.

26. The surface reactor (1) as recited in Claims 21 through 25,
wherein a filter made of wire screen and fabric is provided on the outlet side after the active material.

27. The surface reactor (1) as recited in Claims 21 through 24,
wherein the material is activated by alternate dipping in sodium hydroxide solution, alcohol, and wax before it is inserted into the housing.

28. The surface reactor (1) as recited in at least one of the preceding claims,
wherein the specific surface area per unit area of the body (1.1) is increased by blasting with blasting material, such as aluminum oxide and/or by using a reducing agent.

29. A method for initial activation of surface reactors (1),
wherein the activated slurries are filtered through a fine filter, neutralized in alcohol, and introduced as a liquid filling into the reactor housing to the surface reactor.

30. A method for producing a liquid fuel additive,
wherein the activated slurries described in the patent application are filtered in a fine filter and washed in alcohol, and used, along with the alcohol carrier, as an additive for the fuel.